
Navigation Improvement Study
Reconnaissance Report

Johnson Cove
(Calf Island Harbor)
Roque Bluffs, Maine

February 1991



US Army Corps
of Engineers
New England Division



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

CENED-PL-P (1105-2-10)

12 February 1991

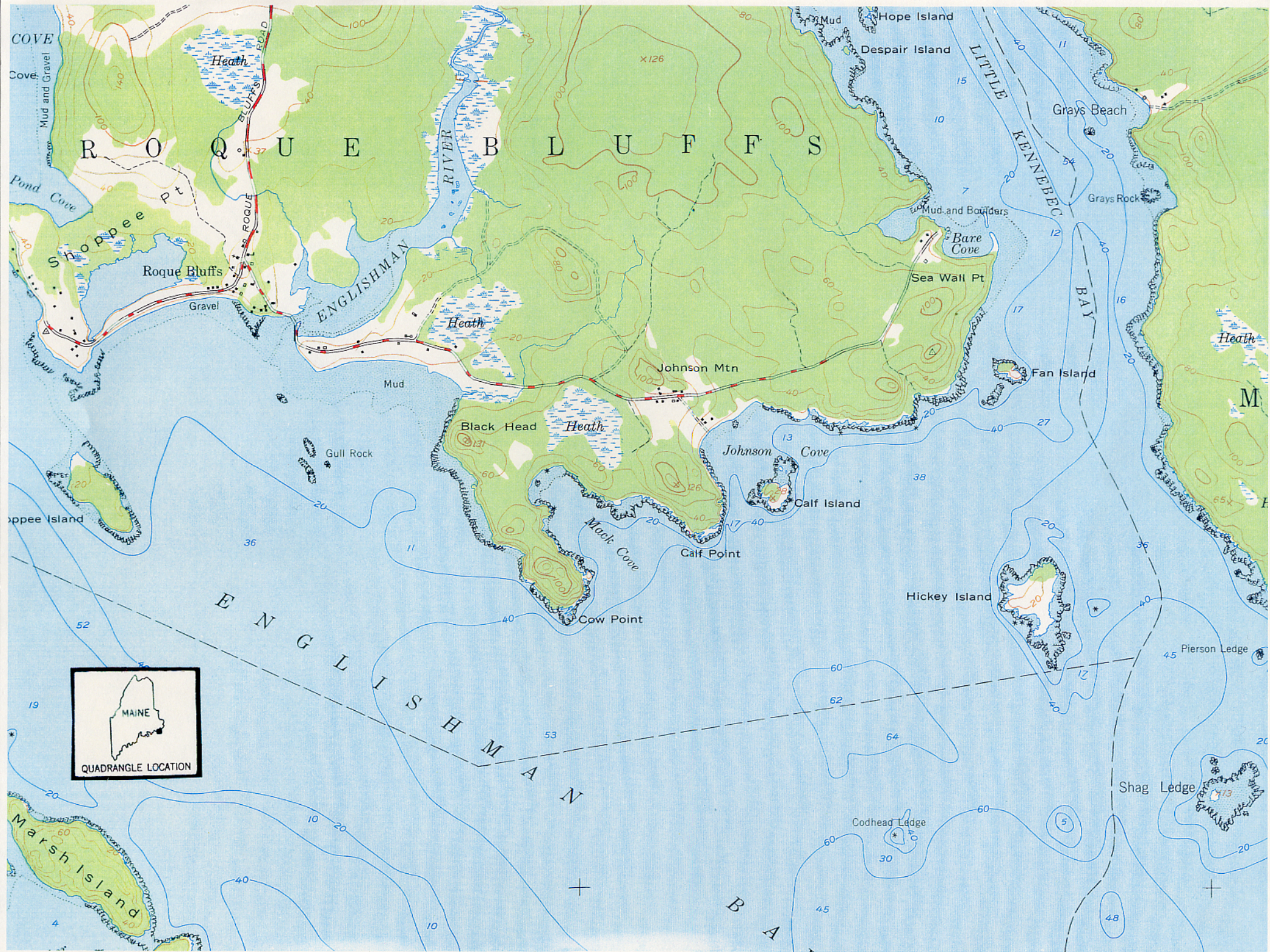
MEMORANDUM FOR Commander, USACE (CECW-P), 20 Massachusetts Avenue, N.W.,
Washington, DC 20314-1000

SUBJECT: Reconnaissance Investigation for Navigation Improvements at Johnson
Cove in Roque Bluffs, Maine - CWIS #87697 - Congressional District 2

1. Our reconnaissance scope investigation to determine the need and feasibility of providing a Federal breakwater at Johnson Cove in Roque Bluffs, Maine has been completed. Federal assistance was requested by letter dated 9 February 1990 from the town of Roque Bluffs Office of the Selectmen. This investigation was conducted under the authority contained in Section 107 of the Rivers and Harbors Act of 1960.
2. Our investigation and subsequent office evaluations, established that the Section 107 navigation improvement project is not eligible for Federal Implementation under this authority. We determined that constructing a breakwater in Johnson Cove is not within the Federal interest due to its excessive cost and lack of economic justification. A letter of our findings was forwarded to Mr. Norman Nelson, Selectmen of Roque Bluffs. A copy of the letter is attached for your information.

Enclosure

PHILIP R. HARRIS
COL, EN
Commanding





REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

December 18, 1990

Planning Directorate
Project Development Branch

Mr. Norman W. Nelson, Selectman
Town Hall
Rogue Bluffs, Maine 04654

Dear Mr. Nelson:

A reconnaissance scope study to determine the need and feasibility of providing a Federal breakwater in Rogue Bluffs, Maine at Johnson Cove, has been completed. The study was accomplished under authority contained in Section 107 of the River and Harbor Act of 1960. Our evaluation determined that constructing a breakwater in Johnson Cove is not within the Federal interest due to its excessive cost and lack of economic justification.

Our investigation was in response to your request to re-evaluate the possibility of the Corps constructing a Federal breakwater in Johnson Cove near Calf Island (see attached map). In 1963 the Corps found that a study of navigational improvements at Johnson Cove was not desired by the town officials and the majority of the town voters.

On June 27, 1990, engineers of my staff met with you, Ms. Valerie Freston, Selectwoman and Mr. Adrian Preston, local fisherman to discuss the navigational needs of Rogue Bluffs. At that meeting, it was learned that local fishermen presently use mooring facilities at either Jonesport or Bucks Harbor. Jonesport and Bucks Harbor are approximately 30 and 20 miles, respectively, from Rogue Bluffs. The fishermen who reside in Rogue Bluffs, work a fleet of 8 lobsterboats and 15 draggers. They have stated that if safe mooring facilities were provided they would relocate their vessels to Johnson Cove to save on their commuting time.

Available information indicates that natural depth in Johnson Cove are adequate for the mooring of commercial fishing craft. The cove is partially sheltered by Calf Island. However, the opening to the sea between Calf Island and Calf Point is exposed to a long fetch to the southeast which creates hazardous wave conditions for safe moorings. This exposure, in combination with the width and natural depths of the opening and the relatively high range of tide (about 15 feet), indicates the need for a structure of substantial size and strength to reduce the damaging wave attack within the cove. The only practical solution to create a safe harbor in the cove is the construction of a solid fill rubble mound breakwater. It was estimated that the length of the breakwater structure should be about 550 feet, so as to provide sufficient protection from wind driven waves. The cost of the breakwater is estimated at approximately \$1.73 million.

If the breakwater was constructed the town's fishermen could relocate to Johnson Cove thereby incurring \$31,000 in annual fuel savings during commuting periods. The annual cost of the breakwater over its projected life, at the current Federal interest rate, is estimated at \$156,000. Economic justification criteria for Corps participation in a Federal navigation project requires that annual benefits due to the project exceed the annualized costs of the project. Because the annual costs of the breakwater far outweigh potential annual benefits it is not within Corps authorities to improve the mooring opportunities in Johnson Cove at this time.

If you should have any further questions, please feel free to contact me at (617) 647-8220 or the project study manager, Mr. Robert Russo at (617) 647-8557.

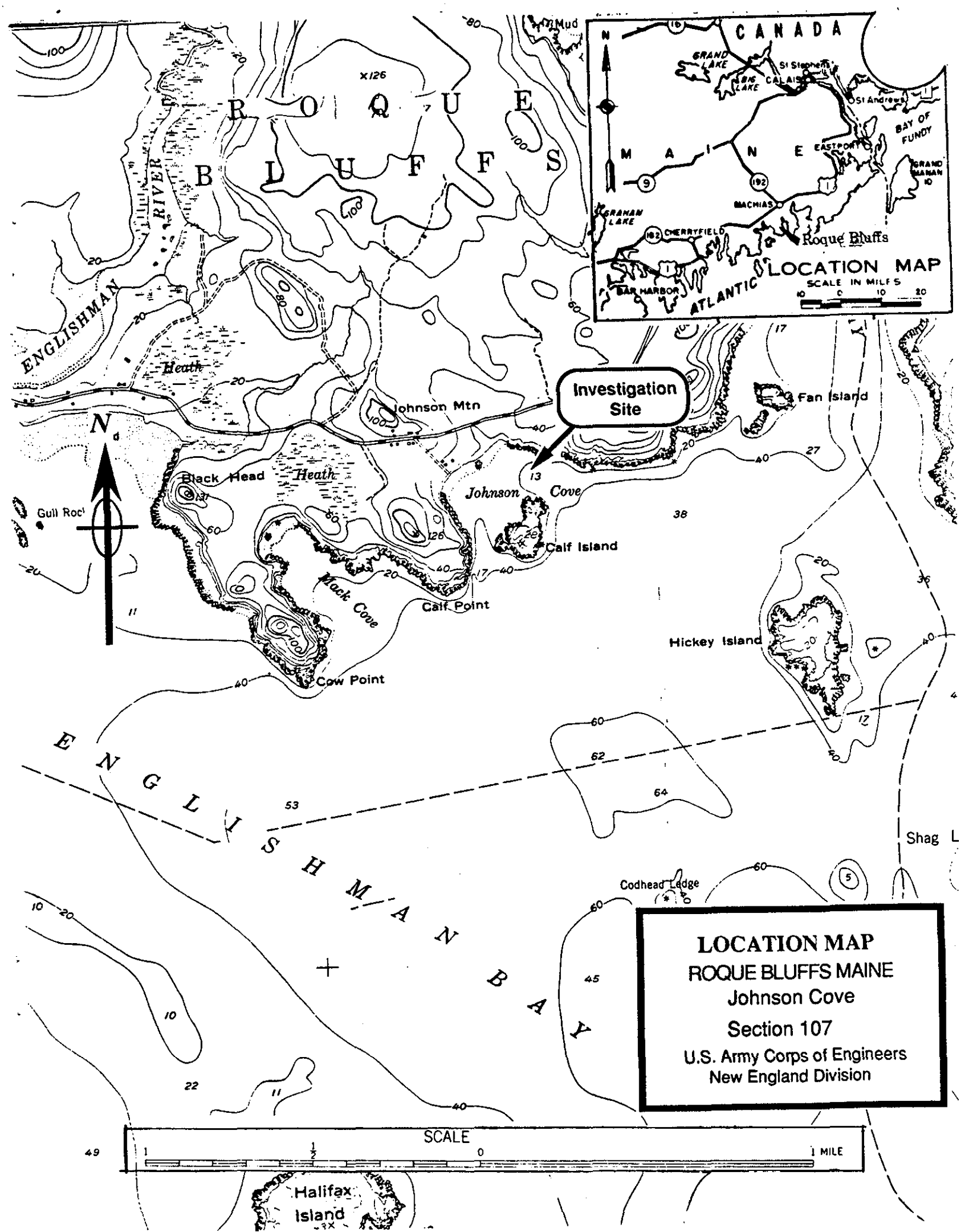
Sincerely,

Philip R. Harris
Colonel, Corps of Engineers
Division Engineer

Enclosure

Copy Furnished:
Mr. Robert Elder
Maine Department of Transportation
Director, Ports & Marine Trans.
State House Station
Augusta, Maine 04333

Mr. Robert Blakesly
State Planning Office
State House Station No. 38
Augusta, Maine 04333



CALF ISLAND HARBOR
JOHNSON COVE
ROQUE BLUFFS, MAINE

COST ESTIMATE

ASSUMPTIONS

Breakwater Would Extend 550 Feet Northeast From Calf Island

Average Depth Along Breakwater Alignment = -10 Feet MLW

Top Elevation of Structure = +18 Feet MLW

Slopes (Both Faces) = 1:1.5

Top Width of Structure = 10 Feet

Armor Stone - 1.5 to 2.5 Feet With 50% >400#

Underlayer Bedding Stone - Up to 100#

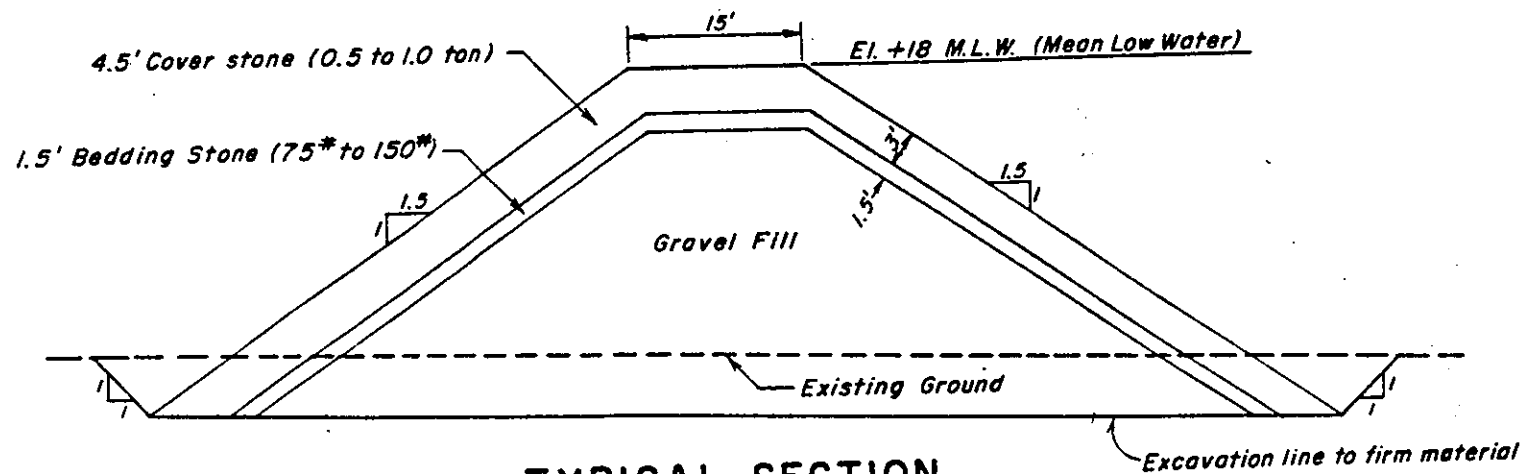
COST ESTIMATE

Excavation	38,800cy	\$12.00/cy	\$ 466,000
Breakwater			
Gravel Fill Core	7,100cy	\$12.00/cy	\$ 85,000
Bedding Underlayer	8,200 Ton	\$20/Ton	\$ 164,000
Armor Stone	20,100 Tons	\$18.00/Ton	\$ 362,000
Subtotal			\$1,077,000
Contingencies (20%)			\$ 215,000
Subtotal			\$1,292,000
Engineering & Design			194,000
Supervision & Administration			223,000
Total GNF			\$1,709,000
Aids To Navigation (Tower With Light - USCG)			20,000
TOTAL FIRST COST*			\$1,729,000

* Note: Does not include mobilization costs
or dredged material disposal costs

ANNUAL COSTS

Interest & Amortization		
8-7/8% - 50 Year Project Life (0.09003)		\$ 155,800



TYPICAL SECTION
RUBBLE-MOUND

CALF ISLAND HARBOR
JOHNSON COVE
ROQUE BLUFFS, MAINE

ECONOMIC ANALYSIS

ASSUMPTIONS

Commercial Fleet = 8 Lobstermen Plus 15 Draggersmen - 23 Total

Fishermen Must Make 50 Mile Round Trip To Jonesport, The Nearest
Alternative Port Where They Can Base Their Boats.

Lobstermen Work an Average of 210 Days Per Year

Draggers Make 60 Trips Per Year at 2.5 Days Per Trip

BENEFIT COMPUTATION

Fishermens Time Savings

Lobstermen - 8 Fishermen X 210 Days Fished	
X 50 Miles Per Round Trip	
X \$0.24 Per Mile =	\$20,200
Draggersmen - 15 Fishermen X 60 Trips	
X 50 Miles Per Round Trip	
X \$0.24 Per Mile =	\$10,800
TOTAL BENEFIT	\$31,000

BENEFIT-COST ANALYSIS

Annual Benefits	\$ 31,000
Annual Costs	\$156,000
Net Benefits	None
B/C Ratio	0.20

Town of Roque Bluffs

ROQUE BLUFFS, MAINE 04654

February 9, 1990

CCL. DANIEL WILSON
COMMANDER N.E. DIVISION
ARMY CORP OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASS 02254

Dear Sir:

In the past, consideration has been given to a Corp of Engineers breakwater project in Roque Bluffs. at that time, because of various factors, it was not possible to obtain the needed local support for the project.

However, because of developments over the past twenty years, the town of Roque Bluffs would like to hereby request that the U.S. Corp of Engineers begin re-evaluation of the proposed breakwater project.

Thank you for your consideration.

Sincerely,

Norman W. Nelson
Valerie E. Ruston
Zane A. Thompson
Selectmen,
Town of Roque Bluffs.

CC Rob Elder
Ports & Marine Trans.
D.C.T.
State House Station
Augusta, Maine 04333